



Dart Aerospace Ltd.
1270 Aberdeen St
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Canada

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D117-762-041
Job Sheet 188335



Part No: D117-762-041

Job Qty: 1 pcs

Part Name: Replacement Skidtube



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/8/19

Job Tracking No:

Due Date: 2/13/19

Created By: Jesse White

Type: Stock

Description: SIOP

Note: DWG D3582 REV E IPP Rev:A 07.06.11 New Issue EC IPP Rev:B 08-02-22 change to revA as per dwg DD verF by:EC IPP REV:C 15.06.11 AS PER CHG002 DD VERF:JLM IPP REV:D 16.02.05 DWG REV:C (ecn16-514) DD VERF:JLM IPP REV:E 17.01.17 as per dwg REV:D DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
130	Skidtubes - 1	1 pcs		2/13/19	0.00	3.47	Skidtubes - 1		DLJ
							Skidtubes - 2		
							Skidtubes - 3		
							Skidtubes - 4		
							Skidtubes - 5		
140	Skidtubes - 2 - B4B	1 pcs		2/13/19	0.00	3.47	Skidtubes - 1 - B4B		HL
							Skidtubes - 2 - B4B		
							Skidtubes - 3 - B4B		
							Skidtubes - 4 - B4B		
							Skidtubes - 5 - B4B		
150	QC 10	1 pcs		2/13/19	0.00	0.00	QC 10 - 10		DL 19-02-26
							QC 10 - 18		
							QC 10 - 24		
							QC 10 - 38		
							QC 10 - 43		
							QC 10 - 50		
							QC 10 - 58		
							QC 10 - 9		
							QC 5 - 10		
							QC 5 - 12		
160	QC 5	1 pcs		2/13/19	0.00	0.00	QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 38		
							QC 5 - 42		
							QC 5 - 43		
							QC 5 - 49		

DART
AEROSPACE

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CANADA
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Container No: S152340



Part: D117-762-041

Job No: 188335

Serial No/Batch: S152340

Revision:

Inspector:

Exp Date:

Instructions: FAA STC SR01853SE 15/04/28/IT/STC LOA RI

170 Handfinish - 1-1 Chemical-B4B	1 pcs	2/13/19	0.00 0.97	QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	DR 12.02.25
				QC 5 - 50	
				QC 5 - 30	
				Handfinish - 1 - 1 - B4B	
				Handfinish - 1 - 2 - B4B	
				Handfinish - 1 - 3 - B4B	
				Handfinish - 1 - 4 - B4B	
				Handfinish - 1 - 5 - B4B	
				Handfinish - 1 - 6 - B4B	
				Handfinish - 1 - 7 - B4B	
				Handfinish - 1 - 8 - B4B	
180 QC 7	1 pcs	2/13/19	0.00 0.00	Handfinish - 1 - 9 - B4B	
				Handfinish - 1 - 10 - B4B	DR 19/02/26
				Handfinish - 1 - 11 - B4B	
				Handfinish - 1 - 12 - B4B	
				Handfinish - 1 - 13 - B4B	
				Handfinish - 1 - 14 - B4B	
				Handfinish - 1 - 15 - B4B	
				Handfinish - 1 - 16 - B4B	
				Handfinish - 1 - 17 - B4B	
				Handfinish - 1 - 18 - B4B	
				Handfinish - 1 - 19 - B4B	
				Handfinish - 1 - 20 - B4B	
				Handfinish - 1 - 21 - B4B	
				Handfinish - 1 - 22 - B4B	
				QC 7 - 10	
				QC 7 - 13	
				QC 7 - 14	
				QC 7 - 15	
				QC 7 - 17	
				QC 7 - 18	
				QC 7 - 19	
				QC 7 - 2	
				QC 7 - 28	
				QC 7 - 3	
				QC 7 - 30	
				QC 7 - 34	
				QC 7 - 36	
				QC 7 - 37	
				QC 7 - 38	
				QC 7 - 41	
				QC 7 - 47	
				QC 7 - 48	
				QC 7 - 51	
				QC 7 - 58	

				QC 7 - 59	
				QC 7 - 6	
				QC 7 - 60	MGK
				QC 7 - 9	
				QC 7 - 68	
				QC 7 - 50	
				QC 7 - 67	
190 Skidtubes - 3 - B4B	1 pcs	2/13/19	0.00 3.47	Skidtubes - 1 - B4B	OD
				Skidtubes - 2 - B4B	
				Skidtubes - 3 - B4B	
				Skidtubes - 4 - B4B	
				Skidtubes - 5 - B4B	BE
200 QC 10	1 pcs	2/13/19	0.00 0.00	QC 10 - 10	
				QC 10 - 18	
				QC 10 - 24	
				QC 10 - 38	
				QC 10 - 43	
				QC 10 - 50	
				QC 10 - 58	
				QC 10 - 9	PD 19-03-15
210 QC 5	1 pcs	2/13/19	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 38	
				QC 5 - 42	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	PD 19-03-15
				QC 5 - 50	
				QC 5 - 30	
215 Handfinish - 2-1 Pressure- B4B	1 pcs	2/13/19	0.00 0.97	Handfinish - 2 - 1 - B4B	
				Handfinish - 2 - 2 - B4B	DR 19/03/19
220 Powdercoat - 1 White GI(A)- B4B	1 pcs	2/13/19	0.00 0.26	Powdercoat - 1 - B4B	
				Powdercoat - 2 - B4B	BE 19-03-25
				Powdercoat - 3 - B4B	
				Powdercoat - 4 - B4B	
230 QC 3	1 pcs	2/13/19	0.00 0.00	QC 3 - 10	
				QC 3 - 13	
				QC 3 - 15	PD 19-3-24
				QC 3 - 17	
				QC 3 - 18	
				QC 3 - 2	
				QC 3 - 26	
				QC 3 - 28	
				QC 3 - 3	
				QC 3 - 30	
				QC 3 - 34	
				QC 3 - 36	
				QC 3 - 38	
				QC 3 - 41	
				QC 3 - 51	

250 Handfinish - 4-1-Assembly-B4B	1 pcs	2/13/19	0.00 0.97	QC 3 - 58	
				QC 3 - 59	
				QC 3 - 6	
				QC 3 - 68	
				QC 3 - 9	
				Handfinish - 4 - 1 - B4B	
				Handfinish - 4 - 10 - B4B	BEB 19-03-26
				Handfinish - 4 - 11 - B4B	
				Handfinish - 4 - 12 - B4B	
				Handfinish - 4 - 13 - B4B	
				Handfinish - 4 - 14 - B4B	
				Handfinish - 4 - 15 - B4B	
				Handfinish - 4 - 2 - B4B	
				Handfinish - 4 - 3 - B4B	
				Handfinish - 4 - 4 - B4B	
				Handfinish - 4 - 5 - B4B	
				Handfinish - 4 - 6 - B4B	
				Handfinish - 4 - 7 - B4B	
				Handfinish - 4 - 8 - B4B	
				Handfinish - 4 - 9 - B4B	
260 QC 5	1 pcs	2/13/19	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 38	
				QC 5 - 42	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	DAS MAR 27 2019 68
				QC 5 - 9	9-89
				QC 5 - 50	
				QC 5 - 30	
270 Packaging 3-1 - Stock - B4B	1 pcs	2/13/19	0.00 0.00	Packaging 3 - 1 - B4B	9-89 69 DAS
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	

				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
275 DC - 1 - B4B	1 pcs	2/13/19	0.00 0.00	DC - 1 - B4B	DAS 21
				DC - 2 - B4B	
280 QC 21 - FG	1 pcs	2/13/19	0.00 0.00	QC 21 - FG - 21	DAS 21
				QC 21 - FG - 70	

MAR 28 2019

MAR 28 2019

Part Op 130 - Skid tubes-1 (Skid tubes) 1-Cut Aft end using DT8185 2-Debur ends 3-Drill Aft Cap holes using DT8678 *** OPEN
 Descriptions: AFT CAP HOLE TO .187" *** 4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube. 5-Install 3/16
 cleco in Ground wire hole ,then drill all X-Bolt holes using 3/16" drill. 6-Drill pilot holes for wearplates using DT8900 7-
 Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582. 8-Drill holes for D5520-1 doubler using DT10309 A & B,
 locating from 4th and 5th crossbolt holes from aft using .1875 clekos. Spot drill tube using #20 drill (note 10). Remove
 DT10309 B. Re-install DT 10309 A drill thru tube and doubler using #20 drill (note 10), cleko as you go. Remove .1875
 clekos and open holes in tube and doubler to 0.750". Remove doublers and identify orientation. 9-Debur doubler and
 doubler holes in skid tube. 10-Countersink doubler holes in skid tube as per Dwg. detail J and note 12 -Touch up alodine
 on D5520-1 doublers. 11- open ground wear holes to 0.391" as per section B-B 12-Open Aft Cap holes using .209" drill.
 13-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65
 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size. 12-Do not open
 holes of section G-G to finishes size.

140 - Skid tubes-1 (Skid tubes) 1-Weld fwd cap D2964 per dwg D3582 and QSI 004 A/R AL ROD

Batch: 138989 2-Grind flush

150 - QC10 (QC10- Inspect visual per QSI004- ground welds)

160 - QC5 (QC5- Inspect part completeness to step on W/O)

170 - HandFinish1 (Chemical Conversion Coat per QSI005 4.1)

180 - QC7-1 (QC7-Inspect Chemical Conversion Coat)

190 - Skid tubes-1 (Skid tubes) ***MASK OFF HOLES OF SECTION F-F (DO NOT C'SINK) 1-Open X-Bolt holes to finish
 size as per Dwg D3582, sections D-D, E-E, G-G as per Dwg. 2-Counter Sink X-BOLT holes as per Dwg D3582 D-D, E-E
 and G-G.***Do NOT countersink holes of section F-F). 3-Debur and blow out chips from inside of tube, prep. tube for
 welding. 4-Install doublers using DT10309 B. Shave rivets as required. 5-Bond web as per Dwg D3582 & QSI 015 A/R
 241 Sika Flex Batch: M138989 Exp Date: 03/07/19 6- Swage x-bolt spacer as per dwg and
 Section F-F QSI002 7-Weld x-bolt spacers as per Dwg D3582 section D-D, E-E and G-G. A/R AL ROD

Batch: 138989 8-Grind welds flush

200 - QC10 (QC10- Inspect visual per QSI004- ground welds)

210 - (QC5- Inspect part completeness to step on W/O)

215 - HandFinish2 (Pressure Wash per QSI005 4.3/ Clean and remove all markings) Touch-up alodine as per QSI

220 - Powdercoat1 (White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum) START TIME 12:55 OVEN TEMPERATURE:
320° FINISH TIME: 1:25 M138989

230 - (QC3- Inspect Part Finish)

250 - HandFinish4 (Assemble as per dwg) 1-Inspect for Foreign objects 2-Install Aft cap as per Dwg D3582, Detail "C"
 A/R 241 Sika Flex Batch: M128386 Exp Date: 19/03 3-Install Wearplates as per Dwg D3582 ,
 Note:Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582 *****Do not install
 bolts where indicated on Dwg(Note #6)***** 4- Wing Walk as per Dwg D3582 and QSI 005 4.4

260 - (QC5- Inspect part completeness to step on W/O)

270 - Identify and pack for shipping as per PPP D117-762-041 Location :FG081

275 - (Document Control) Photocopy bluefile & type labels per PPP D117-762-041 CHG003

280 - (QC21- Final Inspection - Work Order Release)

wing walk 5163430

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D3582-1-BENT	Skidtube Assembly BK117	1 pcs (1 ea)	130-Skidtubes - 1	5144991
D5520-1	Doubler	2 Ea (2 ea)	130-Skidtubes - 1	5146905
D2964	Cap	1 pcs (1 ea)	140-Skidtubes - 2 - B4B	5146305
CR3212-5-05	Rivet	68 pcs (68 ea)	190-Skidtubes - 3 - B4B	5117005
D2971	Cross Bolt Spacer	1 pcs (1 ea)	190-Skidtubes - 3 - B4B	5090635
D3584-1	Web	1 pcs (1 ea)	190-Skidtubes - 3 - B4B	5145145
D3662-1	Crossbolt Spacer	3 pcs (3 ea)	190-Skidtubes - 3 - B4B	5148281
D3662-3	Crossbolt Spacer	1 pcs (1 ea)	190-Skidtubes - 3 - B4B	F81606
D5304-1	Crossbolt Spacer	2 pcs (2 ea)	190-Skidtubes - 3 - B4B	5148275
ALS4-1032-130	Rivnut	36 Ea (36 ea)	250-Handfinish - 4-1-Assembly-B4B	
ALS4-428-165	Insert	2 Ea (2 ea)	250-Handfinish - 4-1-Assembly-B4B	
AN3-5A	Bolt	2 Ea (2 ea)	250-Handfinish - 4-1-Assembly-B4B	
AN3C4A	Bolt	28 Ea (28 ea)	250-Handfinish - 4-1-Assembly-B4B	
AN4-4A	Bolt	2 Ea (2 ea)	250-Handfinish - 4-1-Assembly-B4B	
D2965	Cap	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3508-11	Wearplate Aft Center	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3508-13	Wearplate Aft	1 Ea (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3508-3	Wearplate Fwd Center	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3508-9	Wearplate Fwd	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3558-11	Gasket Aft Center	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3558-13	Gasket Aft	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3558-3	Gasket Center Fwd	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
D3558-9	Gasket Fwd	1 pcs (1 ea)	250-Handfinish - 4-1-Assembly-B4B	
NAS1149C0332R	Washer	28 Ea (28 ea)	250-Handfinish - 4-1-Assembly-B4B	
NAS1149D0332J	Washer	2 Ea (2 ea)	250-Handfinish - 4-1-Assembly-B4B	
NAS1149D0416J	Washer	2 Ea (2 ea)	250-Handfinish - 4-1-Assembly-B4B	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
130-Skidtubes - 1	D3582-1-BENT	1	4	0
	D5520-1	2	42	0
140-Skidtubes - 2 - B4B	D2964	1	19	0
190-Skidtubes - 3 - B4B	CR3212-5-05	68	0	0
	D2971	1	31	0
	D3584-1	1	12	0
	D3662-1	3	33	0
	D3662-3	1	24	0
	D5304-1	2	67	0
250-Handfinish - 4-1-Assembly-B4B	ALS4-1032-130	36	10,022	0
	ALS4-428-165	2	106	0
	AN3-5A	2	102	0
	AN3C4A	28	1,895	0
	AN4-4A	2	67	0
	D2965	1	39	0
	D3508-11	1	15	0
	D3508-13	1	17	0
	D3508-3	1	19	0
	D3508-9	1	15	0
	D3558-11	1	12	0
	D3558-13	1	14	0
	D3558-3	1	11	0
	D3558-9	1	11	0
	NAS1149C0332R	28	5,267	0
	NAS1149D0332J	2	2,738	0
	NAS1149D0416J	2	2,206	0

Part Specifications

Specifications could not be found.



Dart Aerospace Ltd.
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Canada

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D117-762-041
Job Sheet 188335



Part No: D117-762-041

Job Qty: 1 ea

Part Name: Replacement Skidtube



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/8/19

Job Tracking No:

Due Date: 2/13/19

Created By: Jesse White

Type: Stock

Description: SIOP

Note: DWG D3582 REV E IPP Rev:A 07.06.11 New Issue EC IPP Rev:B 08-02-22 change to revA as per dwg DD verF by:EC IPP REV:C 15.06.11 AS PER CHG002 DD VERF:JLM IPP REV:D 16.02.05 DWG REV.C (ecn16-514) DD VERF:JLM IPP REV:E 17.01.17 as per dwg REV.D DD VERF:JLM

Ship Via:

Bill of Materials

S/L

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		2/13/19	0.00	0.00	Start Up Skid tubes-1		
130	Skid tubes	1 pcs		2/13/19	0.00	3.47	Skid tubes-1		
140	Skid tubes	1 pcs		2/13/19	0.00	3.47	Skid tubes-1		
150	QC	1 pcs		2/13/19	0.00	0.00	QC10		
160	QC	1 pcs		2/13/19	0.00	0.00	QC5		
170	HandFinish	1 pcs		2/13/19	0.00	0.97	HandFinish1		
180	QC	1 pcs		2/13/19	0.00	0.00	QC7-1		
190	Skid tubes	1 pcs		2/13/19	0.00	3.47	Skid tubes-1		
200	QC	1 pcs		2/13/19	0.00	0.00	QC10		
210	QC	1 pcs		2/13/19	0.00	0.00	QC5		
215	HandFinish	1 pcs		2/13/19	0.00	0.97	HandFinish2		
220	Powdercoat	1 pcs		2/13/19	0.00	0.26	Powdercoat1		
230	QC	1 pcs		2/13/19	0.00	0.00	QC3		
250	HandFinish	1 pcs		2/13/19	0.00	0.97	HandFinish4		
260	QC	1 pcs		2/13/19	0.00	0.00	QC5		
270	Packaging	1 pcs		2/13/19	0.00	0.00	Packaging3-1		
275	DC	1 pcs		2/13/19	0.00	0.00	DC		
280	QC21-FG	1 Ea		2/13/19	0.00	0.00	QC21		

Part Op 130 - 1-Cut Aft end using DT8185 2-Deburr ends 3-Drill Aft Cap holes using DT8678 *** OPEN AFT CAP HOLE TO .187" Descriptions: *** 4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube. 5-Install 3/16 cleco in Ground wire hole ,then drill all X-Bolt holes using 3/16" drill. 6-Drill pilot holes for wearplates using DT8900 7-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582. 8-Drill holes for D5520-1 doubler using DT10309 A & B, locating from 4th and 5th crossbolt holes from aft using .1875 clekos. Spot drill tube using #20 drill (note 10). Remove DT10309 B. Re-install DT 10309 A drill thru tube and doubler using #20 drill (note 10), cleko as you go. Remove .1875 clekos and open holes in tube and doubler to 0.750". Remove doublers and identify orientation. 9-Deburr doubler and doubler holes in skid tube. 10-Countersink doubler holes in skid tube as per Dwg. detail J and note 12 -Touch up alodine on D5520-1 doublers. 11- open ground wear holes to 0.391" as per section B-B 12-Open Aft Cap holes using .209" drill. 13-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size. 12-Do not open holes of section G-G to finishes size.

140 - 1-Weld fwd cap D2964 per dwg D3582 and QSI 004 A/R AL ROD Batch: 138989 2-Grind flush

190 - ***MASK OFF HOLES OF SECTION F-F (DO NOT C'SINK) 1-Open X-Bolt holes to finish size as per Dwg D3582, sections D-D, E-E, G-G as per Dwg. 2-Counter Sink X-BOLT holes as per Dwg D3582 D-D, E-E and G-G.***Do NOT countersink holes of section F-F). 3-Deburr and blow out chips from inside of tube, prep. tube for welding. 4-Install doublers using DT10309 B. Shave rivets as required. 5-Bond web as per Dwg D3582 & QSI 015 A/R 241 Sika Flex Batch: _____ Exp Date: _____ 6- Swage x-bolt spacer as per dwg and Section F-F QSI002. 7-Weld x-bolt spacers as per Dwg D3582 section D-D, E-E and G-G. A/R AL ROD Batch: _____ 8-Grind welds flush

215 - Touch-up alodine as per QSI

220 - START TIME _____ OVEN TEMPERATURE: _____ FINISH TIME: _____

250 - 1-Inspect for Foreign objects 2-Install Aft cap as per Dwg D3582, Detail "C" A/R 241 Sika Flex Batch: _____ Exp Date: _____ 3-Install Wearplates as per Dwg D3582 , Note:Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582 *****Do not install bolts where indicated on Dwg(Note #6)***** 4- Wing Walk as per Dwg D3582 and QSI 005 4.4

270 - Identify and pack for shipping as per PPP D117-762-041 Location :FG081

275 - Photocopy bluefile & type labels per PPP D117-762-041 CHG003

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D3582-1-BENT	Skidtube Assembly BK117	1 pcs (1 ea)	90-Start up Operation	5144991
D5520-1	Doubler	2 Ea (2 ea)	130-Skidtubes	5146505
D2964	Cap	1 pcs (1 ea)	140-Skidtubes	5146305
CR3212-5-05	Rivet	68 pcs (68 ea)	190-Skidtubes	
D2971	Cross Bolt Spacer	1 pcs (1 ea)	190-Skidtubes	
D3584-1	Web	1 pcs (1 ea)	190-Skidtubes	
D3662-1	Crossbolt Spacer	3 pcs (3 ea)	190-Skidtubes	
D3662-3	Crossbolt Spacer	1 pcs (1 ea)	190-Skidtubes	
D5304-1	Crossbolt Spacer	2 pcs (2 ea)	190-Skidtubes	
ALS4-1032-130	Rivnut	36 Ea (36 ea)	250-HandFinish	5007279
ALS4-428-165	Insert	2 Ea (2 ea)	250-HandFinish	5058145
AN3-5A	Bolt	2 Ea (2 ea)	250-HandFinish	5095480
AN3C4A	Bolt	28 Ea (28 ea)	250-HandFinish	5152638
AN4-4A	Bolt	2 Ea (2 ea)	250-HandFinish	5148662
D2965	Cap	1 pcs (1 ea)	250-HandFinish	5045482
D3508-11	Wearplate Aft Center	1 pcs (1 ea)	250-HandFinish	5146332
D3508-13	Wearplate Aft	1 Ea (1 ea)	250-HandFinish	5148277
D3508-3	Wearplate Fwd Center	1 pcs (1 ea)	250-HandFinish	5148273
D3508-9	Wearplate Fwd	1 pcs (1 ea)	250-HandFinish	5145470
D3558-11	Gasket Aft Center	1 pcs (1 ea)	250-HandFinish	5146259
D3558-13	Gasket Aft	1 pcs (1 ea)	250-HandFinish	5122525
D3558-3	Gasket Center Fwd	1 pcs (1 ea)	250-HandFinish	5146222
D3558-9	Gasket Fwd	1 pcs (1 ea)	250-HandFinish	5146233
NAS1149C0332R	Washer	28 Ea (28 ea)	250-HandFinish	5148669
NAS1149D0332J	Washer	2 Ea (2 ea)	250-HandFinish	5123446
NAS1149D0416J	Washer	2 Ea (2 ea)	250-HandFinish	FM131511

M.U. 008866

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D3582-1-BENT	1	5	0
130-Skidtubes	D5520-1	2	12	0
140-Skidtubes	D2964	1	2	0
190-Skidtubes	CR3212-5-05	68	183	0
	D2971	1	31	0
	D3584-1	1	5	0
	D3662-1	3	9	0
	D3662-3	1	24	0
	D5304-1	2	17	0
250-HandFinish	ALS4-1032-130	36	10,364	0
	ALS4-428-165	2	31	0
	AN3-5A	2	160	0
	AN3C4A	28	1,045	0
	AN4-4A	2	30	0
	D2965	1	43	0
	D3508-11	1	7	0
	D3508-13	1	9	0
	D3508-3	1	9	0
	D3508-9	1	7	0
	D3558-11	1	4	0
	D3558-13	1	14	0
	D3558-3	1	5	0
	D3558-9	1	5	0
	NAS1149C0332R	28	2,982	0
	NAS1149D0332J	2	2,130	0
	NAS1149D0416J	2	2,248	0

Part Specifications

Specifications could not be found.

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					

ITEM	Qty -041	Part Number	Description
	X	D3582-041	SKIDTUBE ASSEMBLY
1	1	D2962-150	EXTRUSION
2	1	D2964	CAP
3	1	D2965	CAP
4	1	D2971	CROSS BOLT SPACER
5	1	D3508-3	WEARPLATE
6	1	D3508-9	WEARPLATE
7	1	D3508-11	WEARPLATE
8	1	D3508-13	WEARPLATE
9	1	D3558-3	GASKET
10	1	D3558-9	GASKET
11	1	D3558-11	GASKET
12	1	D3558-13	GASKET
13	1	D3584-1	WEB
14	3	D3662-1	CROSS BOLT SPACER
15	1	D3662-3	CROSS BOLT SPACER
16	2	D5304-1	CROSS BOLT SPACER
17	2	D5520-1	DOUBLER
18	28	AN3C4A	BOLT
19	2	AN3-5A	BOLT
20	2	AN4-4A	BOLT
21	28	NAS1149C0332R	WASHER (AN960C10L)
22	2	NAS1149D0332J	WASHER (AN960JD10L)
23	2	NAS1149D0416J	WASHER (AN960JD416L)
24	36	AELS-1032-130	INSERT
25	2	ALS7-428-165	INSERT
26	68	CR3212-5-05	CSK RIVET, CHERRY MAX

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 18.2 lbs
- 8) WELDING: PER DART QSI 004.
- 9) INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 10) USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS IN INDICATED LOCATIONS
- 12) LOCATE QTY (34) HOLES ONTO THE SKIDTUBE PER D5520-1 DOUBLER AND DRILL Ø0.161 THRU SKIDTUBE AND DOUBLER USING DT10309. COUNTERSINK Ø0.286 x 100" (34 PL) PER DOUBLER AND INSTALL EACH D5520-1 DOUBLER USING QTY (34) CR3212-5-05 CSK RIVETS.

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2017-08-11
EN 17-547

E	MOVE VIEWS FROM SHT 1 TO SHT 2. ADD ITEMS 17 & 26 AND NOTE 12-13. Ø0.187 HOLE WAS Ø0.75. ADD SHT 3, ADD DETAIL J. SECTION F-F ADD D5520-1. SCALE ON VIEWS WAS 3X.	AJS	17.03.27
D	D5304-1 WAS D2973; REVISE BOM & SECTION F-F & SECTION NOTES (ZN B7-3, A8-3); REF NCR16-6160	RF	17.01.09
C	D3492 PLUG ASSEMBLIES REMOVED. REFORMAT NOTES SHT 1	AP	15.11.02
B	29.88 WAS 29.87 (ZN C2-1), INCORPORATED DEO D3582-A-1 (ZN D5-1), FORMAT TO CURRENT STD	RF	15.02.20
A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	<i>Mla</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>DP</i>	D3582	SHEET 1 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.		BK 117 SKIDTUBE ASSEMBLY	NTS
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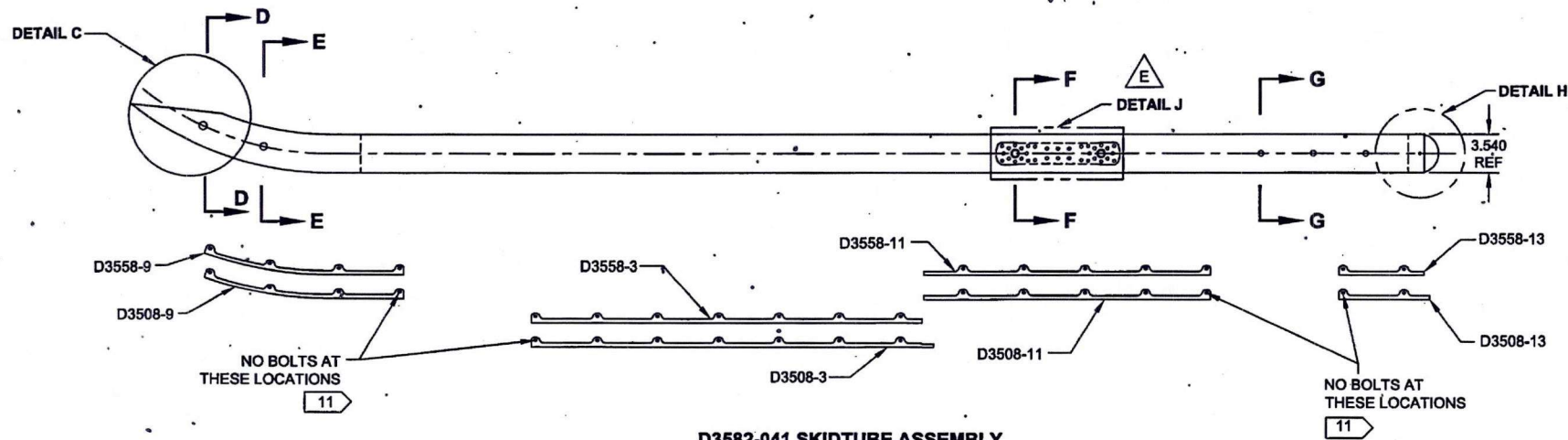
WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

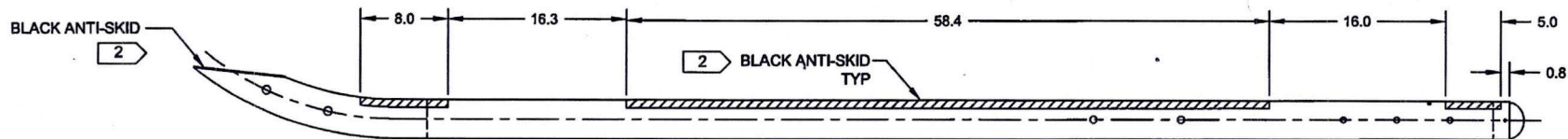
Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

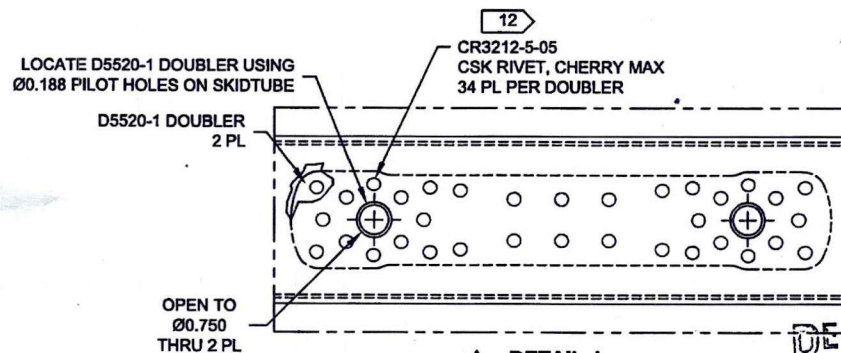
8 7 6 5 4 3 2 1



D3582-041 SKIDTUBE ASSEMBLY
(ASSEMBLY DETAIL)



D3582-041 SKIDTUBE ASSEMBLY
(BLACK ANTI-SKID DETAIL)



DETAIL J
SCALE 3X

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2017-08-11

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	<i>MB</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>DP</i>	D3582	SHEET 2 OF 4
APPROVED	<i>4</i>	TITLE	SCALE
DE APPR.		BK 117 SKIDTUBE ASSEMBLY	NTS
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8 7 6 5 4 3 2 1

Entered: _____ Date: _____

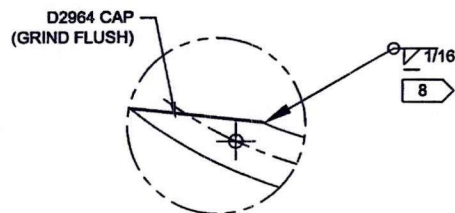


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

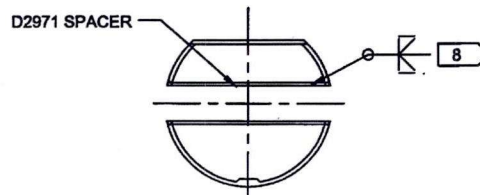
NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042) _____	
Description Work Order Deviation		Disposition			Completed By
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					

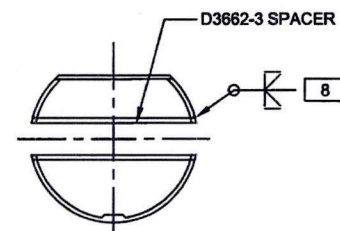


DETAIL C
SCALE 4X



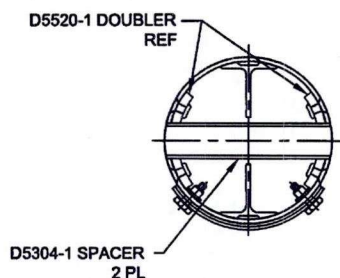
SECTION D-D
SCALE 4X

- SECTION D-D NOTES**
AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:
1. CHAMFER HOLE 0.030 x 45°
 2. INSERT D2971 SPACER
 3. WELD INTO PLACE AND GRIND FLUSH
 4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER



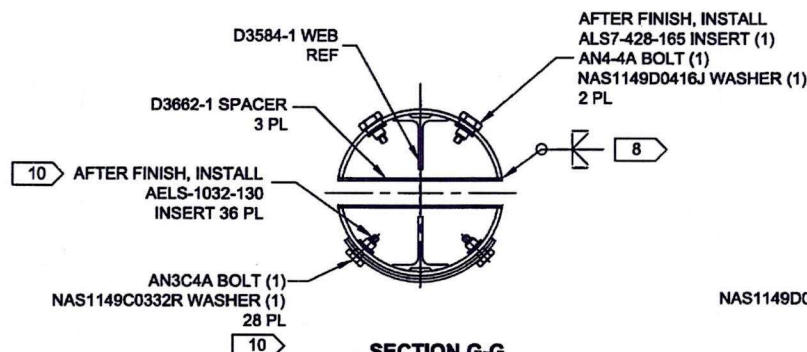
SECTION E-E
SCALE 4X

- SECTION E-E NOTES**
AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:
1. CHAMFER HOLE 0.030 x 45°
 2. INSERT D3662-3 SPACER
 3. WELD INTO PLACE AND GRIND FLUSH
 4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER



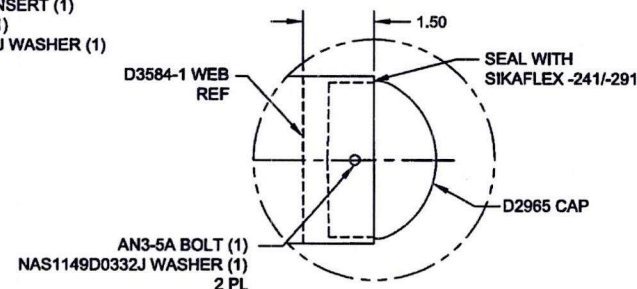
SECTION F-F
SCALE 4X
2 PL

- SECTION F-F NOTES**
AFTER BENDING AND DRILLING ASSY
PERFORM THE FOLLOWING:
1. INSERT D5304-1 SPACER
 2. SWAGE TO Ø0.565 +0.005/-0.000 X 1.0 DEEP PER QSI 002
 3. OPEN THRU HOLE TO Ø0.625
 4. GRIND FLUSH



SECTION G-G
SCALE 4X

- SECTION G-G NOTES**
AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:
1. CHAMFER HOLE 0.030 x 45°
 2. INSERT D3662-1 SPACER (3 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER



DETAIL H
SCALE 4X

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	<i>M. Lee</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>[Signature]</i>	D3582	SHEET 3 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	BK 117 SKIDTUBE ASSEMBLY	NTS
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2017-08-11

Entered: _____ Date: _____

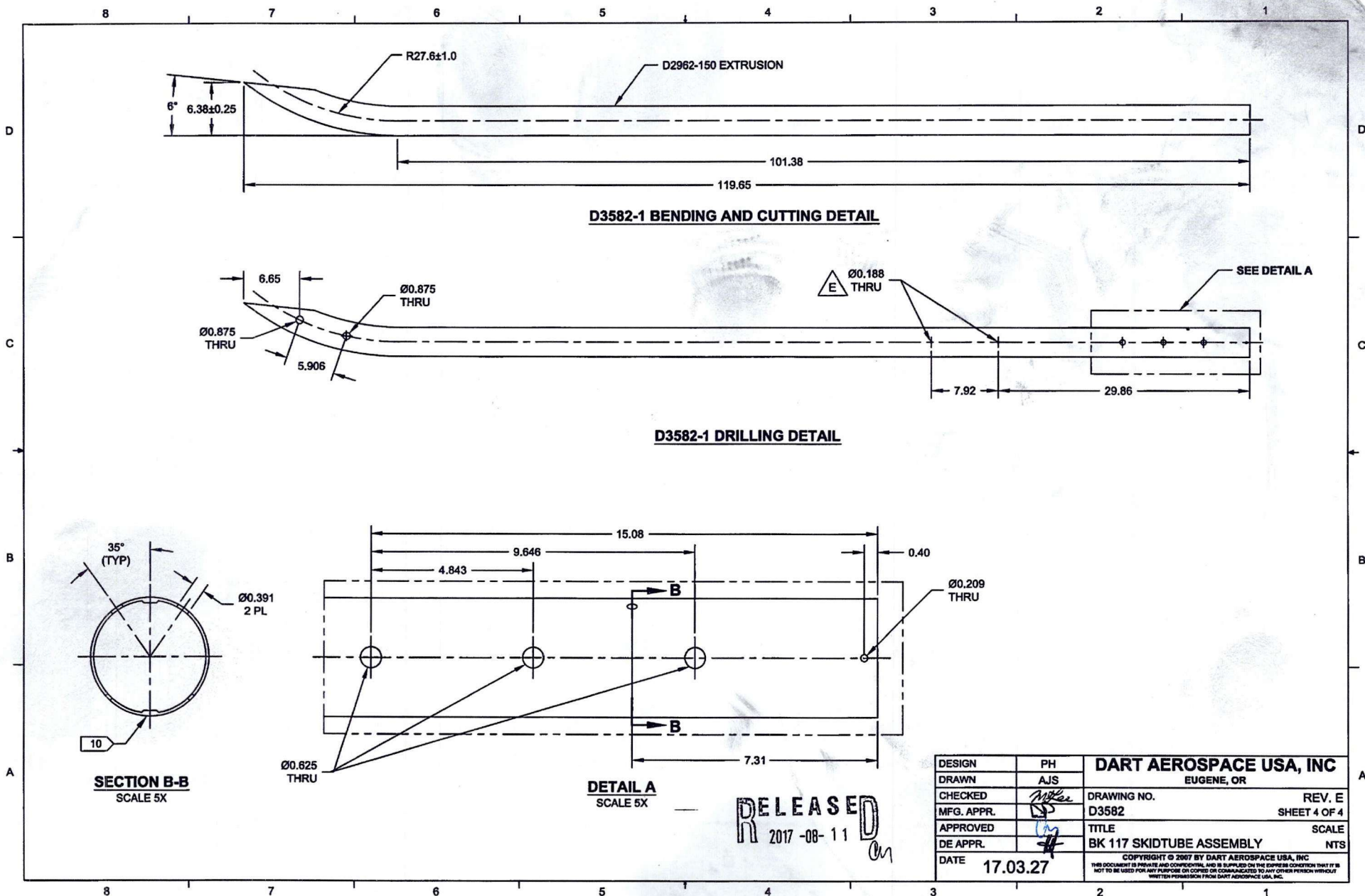


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					



Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS			
		Skid-tube ☐ Machining ☐ Large Fab ☐	Cross tube ☐ Small Fab ☐ Finishing ☐	Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐	Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐
Date :	Sequence #:	QTY Affected :			MRB (QSI042)
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor
					QC / QA Coordinator
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY			
		☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled	☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up	☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread
		Other/Details:			